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Sequence Listing was accepted.

See attached Validation Report.

If you need help call the Patent Electronic Business Center at (866)  
217-9197 (toll free).

Reviewer: markspencer

Timestamp: [year=2008; month=1; day=23; hr=10; min=10; sec=15; ms=1; ]

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Application No: 10531662 Version No: 2.0

Input Set:

Output Set:

Started: 2007-12-28 21:38:55.627  
Finished: 2007-12-28 21:38:57.051  
Elapsed: 0 hr(s) 0 min(s) 1 sec(s) 424 ms  
Total Warnings: 3  
Total Errors: 7  
No. of SeqIDs Defined: 25  
Actual SeqID Count: 25

Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (1)
W 213	Artificial or Unknown found in <213> in SEQ ID (2)
W 213	Artificial or Unknown found in <213> in SEQ ID (3)
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E 257	Invalid sequence data feature in <221> in SEQ ID (9)
E 257	Invalid sequence data feature in <221> in SEQ ID (10)
E 257	Invalid sequence data feature in <221> in SEQ ID (11)

# SEQUENCE LISTING

<110> RATCLIFFE, PETER J.  
 PUGH, CHRISTOPHER W.  
 SCHOFIELD, CHRISTOPHER J.  
 HEWITSON, KIRSTY S.

<120> HYDROXYLASES AND MODULATORS THEREOF

<130> 06843-0091

<140> 10531662

<141> 2005-10-21

<150> PCT/GB2003/004492

<151> 2003-10-16

<150> GB 0224102.4

<151> 2002-10-16

<150> GB 0226598.1

<151> 2002-11-14

<160> 25

<170> PatentIn Ver. 3.3

<210> 1

<211> 14

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic  
 Peptide

<400> 1

Asp Glu Ser Gly Leu Pro Gln Leu Thr Ser Tyr Asp Cys Glu  
 1 5 10

<210> 2

<211> 9

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic  
 Peptide

<400> 2

Pro Gln Leu Thr Ser Tyr Asp Cys Glu  
 1 5

<210> 3

<211> 17  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Peptide

<220>  
<221> misc\_feature  
<222> (16)  
<223> any naturally occurring amino acid except Asp

<400> 3  
Asp Glu Ser Gly Leu Pro Gln Leu Thr Ser Tyr Asp Cys Glu Val Xaa  
1 5 10 15

Ala

<210> 4  
<211> 58  
<212> PRT  
<213> Homo sapiens

<400> 4  
Phe Asn Trp Asn Trp Ile Asn Lys Gln Gln Gly Lys Arg Gly Trp Gly  
1 5 10 15

Gln Leu Thr Ser Asn Leu Leu Leu Ile Gly Met Glu Gly Asn Val Thr  
20 25 30

Pro Ala His Tyr Asp Glu Gln Gln Asn Phe Phe Ala Gln Ile Lys Gly  
35 40 45

Tyr Lys Arg Cys Ile Leu Phe Pro Pro Asp  
50 55

<210> 5  
<211> 62  
<212> PRT  
<213> Drosophila melanogaster

<220>  
<221> MOD\_RES  
<222> (17)..(20)  
<223> Variable Amino Acid

<400> 5  
Glu Leu Ala Ala Asp Leu Arg Val Ser Asp Leu Asp Phe Ala Gln Gln  
1 5 10 15

Xaa Xaa Xaa Xaa Pro Pro Asp Ala Val Asn Phe Trp Leu Gly Asp Glu  
20 25 30

Arg Ala Val Thr Ser Met His Lys Asp Pro Tyr Glu Asn Val Tyr Cys

35

40

45

Val Ile Ser Gly His Lys Asp Phe Val Leu Ile Pro Pro His  
50 55 60

&lt;210&gt; 6

&lt;211&gt; 62

&lt;212&gt; PRT

&lt;213&gt; Drosophila melanogaster

&lt;220&gt;

&lt;221&gt; MOD\_RES

&lt;222&gt; (15)..(19)

&lt;223&gt; Variable Amino Acid

&lt;400&gt; 6

Ala Leu Lys Glu Asp Ile Ser Ile Pro Asp Tyr Cys Thr Ile Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Pro Gly Ala Val Asp Ile Lys Ala Trp Leu Gly Pro Ala  
20 25 30

Gly Thr Val Ser Pro Met His Tyr Asp Pro Lys His Asn Leu Leu Cys  
35 40 45

Gln Val Phe Gly Ser Lys Arg Ile Ile Leu Ala Ala Pro Ala  
50 55 60

&lt;210&gt; 7

&lt;211&gt; 65

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; MOD\_RES

&lt;222&gt; (18)..(21)

&lt;223&gt; Variable Amino Acid

&lt;400&gt; 7

Lys Ile Val Arg Lys Leu Ser Trp Val Glu Asn Leu Trp Pro Glu Glu  
1 5 10 15

Cys Xaa Xaa Xaa Xaa Pro Asn Val Gln Lys Tyr Cys Leu Met Ser Val  
20 25 30

Arg Asp Ser Tyr Thr Asp Phe His Ile Asp Phe Gly Gly Thr Ser Val  
35 40 45

Trp Tyr His Val Leu Lys Gly Glu Lys Ile Phe Tyr Leu Ile Arg Pro  
50 55 60

Thr

65

<210> 8  
 <211> 80  
 <212> PRT  
 <213> *Caenorhabditis elegans*  
  
 <220>  
 <221> MOD\_RES  
 <222> (17)..(36)  
 <223> Variable Amino Acid  
  
 <400> 8  
 Arg Phe Val Gln Glu Ile Ser Met Val Asn Arg Leu Trp Pro Asp Val  
   1                  5                  10                  15  
  
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
                   20                  25                  30  
  
 Xaa Xaa Xaa Xaa Pro Lys Val Glu Gln Phe Cys Leu Ala Gly Met Ala  
                   35                  40                  45  
  
 Gly Ser Tyr Thr Asp Phe His Val Asp Phe Gly Gly Ser Ser Val Tyr  
   50                  55                  60  
  
 Tyr His Ile Leu Lys Gly Glu Lys Ile Phe Tyr Ile Ala Ala Pro Thr  
   65                  70                  75                  80

<210> 9  
 <211> 71  
 <212> PRT  
 <213> *Caenorhabditis elegans*  
  
 <220>  
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 <222> (17)..(27)  
 <223> Variable Amino Acid  
  
 <400> 9  
 Arg Phe Val Gln Asp Ile Ser Met Ala Lys Arg Leu Trp Ser Asp Val  
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 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Pro Lys Ile Glu Gln  
                   20                  25                  30  
  
 Ile Cys Ala Ala Ala Met Ala Asn Ser Tyr Thr Asp Phe His Val Asp  
                   35                  40                  45  
  
 Phe Gly Gly Thr Ser Val Tyr Phe His Val Phe Lys Gly Glu Lys Ile  
   50                  55                  60  
  
 Phe Tyr Ile Ala Ala Pro Thr  
   65                  70

<210> 10  
 <211> 77  
 <212> PRT

<213> *Drosophila melanogaster*

<220>

<221> MOD\_RES

<222> (17)..(33)

<223> Variable Amino Acid

<400> 10

Glu Ile Val Arg Gln Ile Asp Trp Val Asp Val Val Trp Pro Lys Gln  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
20 25 30

Xaa Pro Lys Val Gln Lys Tyr Cys Leu Met Ser Val Lys Asn Cys Tyr  
35 40 45

Thr Asp Phe His Ile Asp Phe Gly Gly Thr Ser Val Trp Tyr His Ile  
50 55 60

Leu Arg Gly Ser Lys Val Phe Trp Leu Ile Pro Pro Thr  
65 70 75

<210> 11

<211> 73

<212> PRT

<213> *Saccharomyces cerevisiae*

<220>

<221> MOD\_RES

<222> (19)..(29)

<223> Variable Amino Acid

<400> 11

Gln Asn Asp Leu Val Asp Lys Ile Trp Ser Phe Asn Gly His Leu Glu  
1 5 10 15

Lys Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Pro Lys Val  
20 25 30

Thr Lys Tyr Ile Leu Met Ser Val Lys Asp Ala Tyr Thr Asp Phe His  
35 40 45

Leu Asp Phe Ala Gly Thr Ser Val Tyr Tyr Asn Val Ile Ser Gly Gln  
50 55 60

Lys Lys Phe Leu Leu Phe Pro Pro Thr  
65 70

<210> 12

<211> 61

<212> PRT

<213> *Rattus norvegicus*

<400> 12

Lys Thr Asp Val Phe Gln Glu Val Met Trp Ser Asp Phe Gly Phe Pro  
1 5 10 15

Gly Arg Asn Gly Gln Glu Ser Thr Leu Trp Ile Gly Ser Leu Gly Ala  
20 25 30

His Thr Pro Cys His Leu Asp Ser Tyr Gly Cys Asn Leu Val Phe Gln  
35 40 45

Val Gln Gly Arg Lys Arg Trp His Leu Phe Pro Pro Glu  
50 55 60

<210> 13

<211> 57

<212> PRT

<213> *Caenorhabditis elegans*

<400> 13

Phe Glu Asp Asp Leu Phe His Tyr Ala Asp Asp Lys Lys Arg Pro Pro  
1 5 10 15

His Arg Trp Phe Val Met Gly Pro Ala Arg Ser Gly Thr Ala Ile His  
20 25 30

Ile Asp Pro Leu Gly Thr Ser Ala Trp Asn Ser Leu Leu Gln Gly His  
35 40 45

Lys Arg Trp Val Leu Ile Pro Pro Ile  
50 55

<210> 14

<211> 60

<212> PRT

<213> *Drosophila melanogaster*

<400> 14

Thr Ile Leu Asp Tyr Val Asn Lys Asp Tyr Asn Ile Gln Ile Asp Gly  
1 5 10 15

Val Asn Thr Ala Tyr Leu Tyr Phe Gly Met Trp Lys Thr Thr Phe Ala  
20 25 30

Trp His Thr Glu Asp Met Asp Leu Tyr Ser Ile Asn Tyr Leu His Phe  
35 40 45

Gly Ala Pro Lys Thr Trp Tyr Val Val Pro Pro Glu  
50 55 60

<210> 15

<211> 60

<212> PRT

<213> *Homo sapiens*

<400> 15



Thr Val Leu Asp Val Val Glu Glu Glu Cys Gly Ile Ser Ile Glu Gly  
1 5 10 15

Val Asn Thr Pro Tyr Leu Tyr Phe Gly Met Trp Lys Thr Thr Phe Ala  
20 25 30

Trp His Thr Glu Asp Met Asp Leu Tyr Ser Ile Asn Tyr Leu His Phe  
35 40 45

Gly Glu Pro Arg Ser Trp Tyr Ala Ile Pro Pro Glu  
50 55 60

<210> 16

<211> 56

<212> PRT

<213> *Caenorhabditis elegans*

<400> 16

Thr Ile Leu Glu Asp Thr Asn Tyr Glu Ile Lys Gly Val Asn Thr Val  
1 5 10 15

Tyr Leu Tyr Phe Gly Met Tyr Lys Thr Thr Phe Pro Trp His Ala Glu  
20 25 30

Asp Met Asp Leu Tyr Ser Ile Asn Phe Leu His Phe Gly Ala Pro Lys  
35 40 45

Tyr Trp Phe Ala Ile Ser Ser Glu  
50 55

<210> 17

<211> 60

<212> PRT

<213> *Drosophila melanogaster*

<400> 17

Thr Ile Leu Asn Leu Val Asn Thr Asp Tyr Asn Ile Ile Ile Asp Gly  
1 5 10 15

Val Asn Thr Ala Tyr Leu Tyr Phe Gly Met Trp Lys Ser Ser Phe Ala  
20 25 30

Trp His Thr Glu Asp Met Asp Leu Tyr Ser Ile Asn Tyr Leu His Phe  
35 40 45

Gly Ala Pro Lys Thr Trp Tyr Ala Ile Pro Pro Ala  
50 55 60

<210> 18

<211> 60

<212> PRT

<213> *Homo sapiens*

<400> 18

Thr Ile Leu Asp Leu Val Glu Lys Glu Ser Gly Ile Thr Ile Glu Gly  
1 5 10 15

Val Asn Thr Pro Tyr Leu Tyr Phe Gly Met Trp Lys Thr Ser Phe Ala  
20 25 30

Trp His Thr Glu Asp Met Asp Leu Tyr Ser Ile Asn Tyr Leu His Phe  
35 40 45

Gly Glu Pro Lys Ser Trp Tyr Ser Val Pro Pro Glu  
50 55 60

<210> 19

<211> 58

<212> PRT

<213> *Drosophila melanogaster*

<400> 19

Phe Ala Ser Asp Trp Leu Asn Glu Gln Leu Ile Gln Gln Gly Lys Asp  
1 5 10 15

Asp Tyr Arg Phe Val Tyr Met Gly Pro Lys Asn Ser Trp Thr Ser Tyr  
20 25 30

His Ala Asp Val Phe Gly Ser Phe Ser Trp Ser Thr Asn Ile Val Gly  
35 40 45

Leu Lys Lys Trp Leu Ile Met Pro Pro Gly  
50 55

<210> 20

<211> 58

<212> PRT

<213> *Schizosaccharomyces pombe*

<400> 20

Phe Ala Asp Asp Trp Leu Asn Ala Tyr Val Ile Asp Cys Glu Ser Asp  
1 5 10 15

Asp Phe Arg Phe Ala Tyr Leu Gly Ser His Leu Thr Thr Thr Gly Leu  
20 25 30

His Thr Asp Val Tyr Ala Ser His Ser Phe Ser Val Asn Leu Cys Gly  
35 40 45

Val Lys Cys Trp Leu Phe Ile Asp Pro Lys  
50 55

<210> 21

<211> 349

<212> PRT

<213> *Homo sapiens*

<400> 21

Met	Ala	Ala	Thr	Ala	Ala	Glu	Ala	Val	Ala	Ser	Gly	Ser	Gly	Glu	Pro	1	5	10	15
Arg	Glu	Glu	Ala	Gly	Ala	Leu	Gly	Pro	Ala	Trp	Asp	Glu	Ser	Gln	Leu	20	25	30	
Arg	Ser	Tyr	Ser	Phe	Pro	Thr	Arg	Pro	Ile	Pro	Arg	Leu	Ser	Gln	Ser	35	40	45	
Asp	Pro	Arg	Ala	Glu	Glu	Leu	Ile	Glu	Asn	Glu	Glu	Pro	Val	Val	Leu	50	55	60	
Thr	Asp	Thr	Asn	Leu	Val	Tyr	Pro	Ala	Leu	Lys	Trp	Asp	Leu	Glu	Tyr	65	70	75	80
Leu	Gln	Glu	Asn	Ile	Gly	Asn	Gly	Asp	Phe	Ser	Val	Tyr	Ser	Ala	Ser	85	90	95	
Thr	His	Lys	Phe	Leu	Tyr	Tyr	Asp	Glu	Lys	Lys	Met	Ala	Asn	Phe	Gln	100	105	110	
Asn	Phe	Lys	Pro	Arg	Ser	Asn	Arg	Glu	Glu	Met	Lys	Phe	His	Glu	Phe	115	120	125	
Val	Glu	Lys	Leu	Gln	Asp	Ile	Gln	Gln	Arg	Gly	Gly	Glu	Glu	Arg	Leu	130	135	140	
Tyr	Leu	Gln	Gln	Thr	Leu	Asn	Asp	Thr	Val	Gly	Arg	Lys	Ile	Val	Met	145	150	155	160
Asp	Phe	Leu	Gly	Phe	Asn	Trp	Asn	Trp	Ile	Asn	Lys	Gln	Gln	Gly	Lys	165	170	175	
Arg	Gly	Trp	Gly	Gln	Leu	Thr	Ser	Asn	Leu	Leu	Leu	Ile	Gly	Met	Glu	180	185	190	
Gly	Asn	Val	Thr	Pro	Ala	His	Tyr	Asp	Glu	Gln	Gln	Asn	Phe	Phe	Ala	195	200	205	
Gln	Ile	Lys	Gly	Tyr	Lys	Arg	Cys	Ile	Leu	Phe	Pro	Pro	Asp	Gln	Phe	210	215	220	
Glu	Cys	Leu	Tyr	Pro	Tyr	Pro	Val	His	His	Pro	Cys	Asp	Arg	Gln	Ser	225	230	235	240
Gln	Val	Asp	Phe	Asp	Asn	Pro	Asp	Tyr	Glu	Arg	Phe	Pro	Asn	Phe	Gln	245	250	255	
Asn	Val	Val	Gly	Tyr	Glu	Thr	Val	Val	Gly	Pro	Gly	Asp	Val	Leu	Tyr	260	265	270	
Ile	Pro	Met	Tyr	Trp	Trp	His	His	Ile	Glu	Ser	Leu	Leu	Asn	Gly	Gly	275	280	285	
Ile	Thr	Ile	Thr	Val	Asn	Phe	Trp	Tyr	Lys	Gly	Ala	Pro	Thr	Pro	Lys	290	295	300	

Arg Ile Glu Tyr Pro Leu Lys Ala His Gln Lys Val Ala Ile Met Arg  
305 310 315 320

Asn Ile Glu Lys Met Leu Gly Glu Ala Leu Gly Asn Pro Gln Glu Val  
325 330 335

Gly Pro Leu Leu Asn Thr Met Ile Lys Gly Arg Tyr Asn  
340 345

<210> 22

<211> 41

<212> PRT

<213> Homo sapiens

<400> 22

Ser Met Asp Glu Ser Gly Leu Pro Gln Leu Thr Ser Tyr Asp Cys Glu  
1 5 10 15

Val Asn Ala Pro Ile Gln Gly Ser Arg Asn Leu Leu Gln Gly Glu Glu  
20 25 30

Leu Leu Arg Ala Leu Asp Gln Val Asn  
35 40

<210> 23

<211> 52

<212> PRT

<213> Homo sapiens

<400> 23

Pro Ser Asp Leu Ala Cys Arg Leu Leu Gly Gln Ser Met Asp Glu Ser  
1 5 10 15

Gly Leu Pro Gln Leu Thr Ser Tyr Asp Cys Glu Val Asn Ala Pro Ile  
20 25 30

Gln Gly Ser Arg Asn Leu Leu Gln Gly Glu Glu Leu Leu Arg Ala Leu  
35 40 45

Asp Gln Val Asn  
50

<210> 24

<211> 12

<212> PRT

<213> Homo sapiens

<400> 24

Leu Thr Ser Tyr Asp Cys Glu Val Asn Ala Pro Ile  
1 5 10

<210> 25

<211> 12

<212> PRT

<213> Homo sapiens

<400> 25

Leu Leu Gln Gly Glu Glu Leu Leu Arg Ala Leu Asp  
1 5 10